

IMPLEMENTING A NEW PARADIGM

An Outcome of OMB's Information Initiative "Collecting Information in the Information Age"

BACKGROUND

Governments at all levels (federal, state, local, and tribal) manage complex natural and social environments. They build streets, schools and airports; protect public health and the environment; and provide for public safety and disaster relief. Legislative bodies, executive branch decision-makers, and private sector businesses require accurate information about the communities, people, businesses and habitats affecting and affected by their decisions. This information about buildings, forests, waterways, weather, crime patterns, disease outbreaks, and traffic patterns is spatial data.

Spatial data has long been part of government and business processes, but its value and ubiquity are only now becoming universally recognized because of new technology that can handle large volumes of data and interoperability standards. Approximately 80% of all data used in business and government has a locational component. Much of this information has been developed over the past 30 years to serve narrow parochial missions (such as repairing streets, assessing property taxes, or dispatching emergency services). Little of it is integrated and anchored to other geographic information. With the Internet's distributed architecture and the Web's browsing and display capability, users inside and outside of government are demanding increased data pooling and sharing, based on market-driven interoperability standards.

There are a vast number of applications for geospatial data that would help Government make better decisions, conduct better operations, provide better customer service, and be more accountable. Banks, utilities, insurance companies, police departments, and other public and private sector organizations increasingly find new uses for location-based services, remote sensing, GPS and other technologies to serve citizens and customers better.

The Federal Government has a lead role to play in coordinating the development, access and use of spatial information. This role requires Federal agencies to exercise leadership and cooperate with State, Local and Tribal authorities, the private sector, and academia to develop a coordinated "National Spatial Data Infrastructure" (NSDI). An NSDI integrated across jurisdictions can be a key component for enabling E-Government and E-Commerce to flourish.

Historically, government budget authorities treated spatial data and its supporting infrastructure as data processing expenses to be funded from current year operating budgets. However, as spatial applications began to extend into nearly every aspect of our lives, they began to cut across organization lines and exceed the capacities of single department missions and budgets. Like the national road system, each level of government has an appropriate role, as does the private sector. No one agency or level of government can or should build or fund its spatial data and decision support needs alone.

Spatial Infrastructure has become an essential part of the nation's capital infrastructure. Despite this fact, no widespread capital financing model for GIS has emerged. Spatial infrastructure, an intergovernmental capital asset, continues to be funded by "stovepiped" annual appropriations.

This mismatch between the need for long-term capital financing and the current reliance on annual appropriations remains one of the chief obstacles to the attainment of the NSDI.

Government entities at all levels, as well as private sector organizations, are making major investments in spatial data needed for operations. They fulfill governmental data mandates supporting essential public services and policy goals (such as clean air and water, efficient transportation, safe streets, emergency relief, and urban and rural sustainability). The costs of data stewardship for municipalities, water districts, and other local, state and tribal government organizations are significant. The challenge for all levels of government is to develop common criteria for spatial infrastructure investments, align annual public and private budget cycles more effectively, and pool and leverage spatial investments.

In addition, if spatial data is an important part of the nation's information infrastructure, it should be constructed, maintained, renewed, and budgeted for over its long-term life cycle as any other critical capital asset. Alternative financing mechanisms to the current annual appropriation "stovepipes" are needed.

A NEW PARADIGM EMERGES

We have an historic opportunity for all levels of government, and the private and nonprofit sectors to establish a new paradigm.

- Partnerships among State, local, Tribal, and Federal authorities, and the private sector could help share costs by capturing economies of scale and aligning their pooled capital investments in standardized spatial data layers and content.
- Mechanisms for allocating and sharing data collections and costs efficiently effectively and fairly would encourage data development and stewardship at the right place by the right organization.
- All investors in spatial infrastructure should use common criteria when investing in spatial infrastructure. Criteria would include Federal and market standards for interoperability, data format, and metadata and content standards, along with principles for public access, data security, privacy and other goals affecting governmental and business data.
- Creative financing outside of government appropriation cycles, such as infrastructure bonds or other financial products, could supplement and de-politicize the funding process, providing the liquidity to deploy and sustain shared spatial infrastructure,

In this paradigm, no Federal program or initiative needs to dictate policy to States, local, and tribal jurisdictions, or the private sector, for the NSDI to develop. Rather, all parties collaborate as partners in consortia operating in states, regions, industries or interest groups. This strategy implements the NSDI by aligning spatial infrastructure investments using common investment criteria.

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As part of OMB's Information Initiative "Collecting Information in the Information Age", OMB recently completed a series of public Roundtables exploring how to improve the quality of the spa-

tial data Government collects while minimizing the collection burden. Dialogue focused on the need to overcome the financial and institutional barriers to the sharing of spatial information among Federal, State, local, and tribal entities, and the private sector. In response to participants' recommendations, OMB (in cooperation with the Federal Geographic Data Committee (FGDC), National Performance Review (NPR), Council for Excellence in Government, Urban Logic, and other public and private sector stakeholders) has invited the spatial data community to begin several implementation actions.

- Implementation Teams (I-Teams). I-Teams will organize institutions in their state or region to build statewide portions of the NSDI. Already, New Jersey, Kentucky, North Carolina, Oregon and Metropolitan New York City have committed to establish an I-Team. Each Team, aligning the needs and resources of its State, local, tribal, Federal, and private sector partners, will prepare a comprehensive plan for compiling, maintaining, and financing spatial infrastructure in its Team area. It will identify the needs and responsibilities of the partners, align and leverage resources, and establish detailed timetables and performance measures.
- A Federal Partners Team. Consisting of senior officials of OMB, FGDC, USGS, NOS/NGS, Census, DOT, BLM, NRCS, and EPA, and other interested agencies. The Federal Partners Team will focus Federal agency efforts, respond to and coordinate with I-Teams, and explore new alternatives to develop needed standards
- A Financing Solutions Team (FSTeam). The FSTeam will identify and recommend inter-governmental and public-private financing alternatives to support the NSDI and the I-Teams.
- A Technology Advisory Group (TAG). Open to all vendors and led by the Open GIS Consortium, TAG will be a resource for I-Teams. It will keep I-Teams and Federal Partners informed of technology innovations and be available to solve common technology challenges. By working with I-Teams to develop and test new products and solutions, TAG will accelerate dissemination of knowledge of the substance and process of building interoperable networks and open systems. TAG also will help the FSTeam use standards to develop strategies for procurement, budgeting and capital pooling.

The Financing Solutions Team

The FSTeam will act as investment advisors to the I-Teams and the Federal Partners. It will research and structure ways to improve how spatial infrastructure investments originate, perform and align.

Make A Business Case. The FSTeam will develop a business case, value proposition and financing options for the I-Teams and Federal Partners to use in preparing their working plans and budget proposals. It will help the geospatial community to explain to legislative bodies the benefits of aligning investments to achieve the NSDI.

Explore Better Use of Existing Appropriations Structure. Currently, almost all spatial information budget processing is annual. The FSTeam will explore better ways to fund spatial infrastructure investments by aligning and optimizing appropriations, budget, and procurement cycles at all levels of government, including interagency and cross-cutting mechanisms. It will analyze cash

flows and returns on investment, and compare costs and benefits. It will develop common investment criteria and explore ways to pool and leverage spatial investments.

Suggest New Funding Mechanisms. The FSTeam will use the cash flows, preliminary investment criteria and other results generated by its research and work to design sustainable capital financing options, such as infrastructure bonds or revolving funds. In the case of other national infrastructure and community development activities (such as roads, housing stock, airports, and small business development) the Federal government has used financial intermediaries (such as state bond banks, Fannie Mae, Community Development Corporations, and Small Business Investment Companies) to pool and administer local public and private resources through national investment criteria.

Electronic meeting support, knowledge management and other Web-based collaboration tools will be available to members of the FSTeam. This should minimize the need for face-to-face meetings, conserve the valuable time of its distinguished members, and begin the process of creating a public and private financing toolkit.

Legislation or executive guidance may be needed to authorize specific plan elements (for instance, public and private financial incentives that support the long-term sustainability and value proposition of the NSDI). In such cases, the FSTeam will provide the I-Teams and Federal Partners with suggestions for legislation, executive guidance and supporting documentation reflecting the knowledge of all Teams.